

CLAIMS

What is claimed is:

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1. An apparatus for mixing a fluid within a tank, the apparatus comprising: a beam supported at a balance point on the beam by a means for pivoting attached to a fixed pivot support, the beam movable in cyclic tilting motion about the pivoting means such that ends of the beam move vertically in mutually opposing directions; the ends of the beam pivotally engaging vertical arms depending downwardly therefrom; each of the arms downwardly terminating with a mixing plate engaged therewith; the mixing plates positioned for being immersed within the fluid within the tank so that the mixing plates cause fluid mixing as the beam moves in the tilting motion; and a means for cyclically unbalancing the beam to cause the tilting motion to be cyclic.
- 10 2. The apparatus of claim 1 wherein the unbalancing means comprises at least one weight engaged with the beam and a means for moving the weight along the beam from one side of the pivoting means to another side of the pivoting means thereby causing the cyclic tilting motion.
- 15 3. The apparatus of claim 1 wherein the unbalancing means comprises at least one linear actuator engaged with the beam in a manner whereby linear actuation causes the beam to cyclically move in the tilting motion.
- 20 4. The apparatus of claim 1 wherein the unbalancing means comprises a pair of liquid reservoirs, one of the liquid reservoirs attached at each one of the ends of the beam; and a liquid pump engaged with the pivot support; the reservoirs and the pump in mutual communication for moving the liquid cyclically from one of the reservoirs to the other of the reservoirs thereby causing the tilting motion of the beam.
- 25 5. The apparatus of claim 1 wherein the mixing blades are buoyant.
6. A method for mixing a fluid within a tank, the method comprising the steps of: supporting a beam at a balance point on the beam by a means for pivoting attached to a fixed pivot

support; moving the beam in tilting motion about the pivoting means such that ends of the beam move vertically in mutually opposing directions; pivotally engaging the ends of the beam with vertical arms depending downwardly therefrom; terminating each of the arms downwardly with a mixing plate engaged therewith; positioning the mixing plates for being immersed within the fluid within the tank so that the mixing plates cause fluid mixing as the beam moves in the tilting motion; engaging a means for cyclically unbalancing the beam to cause the tilting motion.

- 5 7. The method of claim 6 further comprising the step of moving a weight cyclically along the beam from one side of the pivoting means to another side of the pivoting means thereby causing the tilting motion.
- 10 8. The method of claim 6 further comprising the step of engaging a linear actuator with the beam in a manner whereby cyclic linear actuation causes the beam to move in the tilting motion.
- 15 9. The method of claim 6 further comprising the step of positioning a pair of liquid reservoirs, one of the liquid reservoirs attached near each one of the ends of the beam; and positioning a liquid pump engaged with the pivot support; interconnecting the reservoirs and the pump in mutual fluid communication; and cyclically moving the liquid from one of the reservoirs to the other of the reservoirs thereby causing the tilting motion of the beam.